REMARKS

Claims 1-27 are pending the present application. Claims 1, 6, and 13 are amended to remove phrases that had previously been added and to include features of the coarse-measuring unit. Claims 21-27 are added. These new claims and amendments contain no new matter and are supported by the whole specification, including Figure 1 and pages 8-13.

The Office Action rejected claims 21-20 under 35 U.S.C. § 112, second paragraph. Claims 1, 6 and 13 are amended to remove the phrases cited as indefinite, which had previously been added. Applicants respectfully request reconsideration of amended claims 1, 6, and 13 as well as claims 2-5, 7-12, and 14-20 that depend from these claims.

The Office Action rejected claims 1-2, 5-10, and 13-19 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,991,324 to Knowles et al. ("Knowles") in view of D. Derickson, "Fiber optic test and measurement", Prentice-Hall, NJ, 1998, pp. 131-168. ("Derickson").

Applicants traverse the rejections of claims 1-2, 5-10, and 13-19, because the references fail to suggest the claimed invention.

Claims 1, 6, and 13 recite, *inter alia*, "a coarse-measuring unit" comprising "a beam splitter adapted for splitting up a received beam derived from the incoming optical beam into a first beam towards a first detector and a second beam directed towards a second detector". Knowles discloses an "eschelle grating 76" that provides a coarse measure of the beam on the photo diode array 80 (left side). (Knowles, Figure 10, col. 9, lines 44-53). Applicants have carefully reviewed Knowles and Derickson and cannot find any suggestion to replace the "linear photo diode array 80" of Knowles with the claimed two detectors. To do so, would simplify the wavemeter, while still providing the same functionality, which is evidence of nonobviousness. The combination of Knowles and

Derickson does not teach or suggest how to specifically design the claimed invention so that an accurate measurement is obtained without using "eschelle grating 76" and "linear photo diode array 80," nor does it suggest how to do so.

Moreover, Derickson teaches away from a combination with Knowles. The claimed invention is entitled "High Accuracy Wavemeter". Derickson discloses a "wavelength discriminator" having a wavelength dependent beamsplitter and two detectors. (Derickson, pp. 164-165, Figure 4.22). Derickson states that the "wavelength discriminator" "has moderate wavelength accuracy when compared to interferometer-based wavelength meters" and "reduced performance". (Derickson, pp. 165-166). Derickson provides a chart and "several important points" in summary that seem to suggest "concentrating on a Michelson interferometer approach", rather than a wavelength discriminator approach. (Derickson, pp. 165-166, Table 4.3). Applicants have addressed the accuracy problem and claimed a "High Accuracy Wavemeter" having "a coarse-measuring unit" that directs beams towards two detectors. The claimed invention does not involve the "eschelle grating 76" or "linear photo diode array 80" of Knowles, yet still provides an accurate measurement. A person of skill in the art, upon reading Knowles and Derickson would be discouraged from following the wavelength discriminator approach and would be led in a direction divergent from the path that Applicants took.

Furthermore, substantial reconstruction and redesign of references as well as a change in the basic principles under which the references operate would be necessary to arrive at the claimed invention. Knowles discloses a coarse measure that is on the left side of "linear photo diode array 80" and "interference fringes on the middle and right side of linear photo diode array 80." (Knowles, col. 9, lines 44-59). Knowles discloses a different operating principle, namely image analysis on the "etalon fringe signal as measured by a linear photodiode array". (Knowles, col. 10, line 1 to col. 11 line 29, and Figures 11A and 11B). This image analysis involves complicated approximation and judgment, which may introduce errors. (Knowles, col. 10, line 1 to col. 11 line 29). In

addition, Knowles discloses computing an absolute wavelength. (Knowles, col. 10, line 66 to col. 11 line 8). By contrast, the claimed invention is far simpler and arguably more accurate, while providing the same result. The claimed invention operates without needing to compute an absolute wavelength and without any fringes to analyze. Claims 1, 6, and 13 include determining a result by selecting a fine wavelength value that is within a range around the coarse wavelength value. (See Applicant's Specification, Figure 3). The claimed determination requires no image analysis and only a few simple calculations. Furthermore, Derickson classifies the general principle of operation disclosed in Knowles and the general principle of operation of the claimed invention into different sections in section 4.6, which is entitled "Alternate Wavelength Meter Techniques". (Derickson, pp. 159-165). In addition, there is no suggestion or motivation in either Knowles or Derickson to change the principle of operation disclosed in Knowles to be that of the claimed invention. Thus, the claimed invention operates under different principles and is far simpler and less computationally intensive. Simplicity in an invention may constitute great excellence and value.

It would not have been obvious to one of skill in the art to combine the references without having access to Applicant's specification to arrive at the claimed invention. The Office Action attempted to piece together the claimed invention using the claims as a guide. The claimed invention must be considered as a whole, not merely considering the differences between the prior art and the claims and stating that the differences individually are obvious.

Therefore, claims 1, 6, and 13 are patentable over the combination of Knowles and Derickson. Dependent claims 2, 5, 7-10, 14-19, and 27 depend directly or indirectly from claims 1, 6, and 13, respectively, and, thus, inherit the patentable subject matter of claims 1, 6, and 13. Therefore, claims 2, 5, 7-10, 14-19, and 27 are also patentable over the combination of Knowles and Derickson. New claims 21-26 claim the method of operating a wavemeter in greater detail and are believed to be patentable over Knowles and Derickson for the same reasons.

The Office Action rejected claims 3-4 under 35 U.S.C. §103(a) as being unpatentable over Knowles in view of Derickson as applied to claims 1, 6, and 13 above and further in view of U.S Patent No. 5,515,169 to Cargill et al. ("Cargill") and G.R. Fowles, "Introduction to modern optics", Dover Publications, NY 1968, pp. 96-99 ("Fowles").

Applicants traverse the rejections of claims 3 and 4, because the references fail to suggest the claimed invention. Claims 3 and 4 are patentable over Knowles and Derickson for the reasons given above with respect to claims 1, because they depend from claim 1 and inherit the patentable subject matter in claim 1. Applicant has carefully reviewed Cargill and Fowles and is unable to find anything in them to make up for the failure to suggest the claimed invention.

The Office Action rejected claims 11, 12, and 20 under 35 U.S.C. §103(a) as being unpatentable over Knowles in view of Derickson as applied to claims 1, 6, and 13 and further in view of DE4114407A1 to Vry et al. ("Vry").

Applicants traverse the rejections of claims 11, 12, and 20, because the references fail to suggest the claimed invention. Claims 11, 12, and 20 are patentable over Knowles and Derickson for the reasons given above with respect to claims 6 and 13, because they depend from claims 6 and 13 respectively and inherit the patentable subject matter in claims 6 and 13. Applicant has carefully reviewed Vry and is unable to find anything in Vry to make up for the failure to suggest the claimed invention.

In view of the foregoing, Applicants respectfully submit that all of the claims in the present application are patentably distinguishable over the references cited in the Office Action. Accordingly, Applicants respectfully request reconsideration and passing the claims to allowance.

Respectfully submitted,

12.31.03
Date

Paul D. Greeley, Esq.
Reg. No. 31019
Attorney for the Applicants
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
Tel: 203-327-4500
Fax: 203-327-6401